

REMARKS

By this amendment, claims 1-21 are pending, in which claim 21 is newly presented. No claim is canceled, withdrawn, or amended. No new matter is introduced. A proposed replacement drawing for Figure 3 is submitted herewith. Applicant respectfully traverses the rejection of claims 1-20, and requests reconsideration of the pending application and allowance of all pending claims.

The Office Action mailed October 1, 2003 objected to the drawings as failing to comply with 37 C.F.R. § 1.84(p)(4) and rejected claims 1-20 under 35 U.S.C. § 103(a) as obvious over *Gleeson et al.* (2000) in view of *Lewis et al.* (U.S. Patent No. 4,924,500).

In response to the objection to the drawings, Applicant proposes a drawing correction to amend Figure 3 to replace the three reference characters “22” with reference characters 22a, 22b and 22d, respectively associated with BR 22a linked to CPE 24a and CPE 25a, with BR 22b linked to CPE 24b and CPE 25b, and with BR 22d linked to CPE 24d and CPE 25d in the drawing. Applicant respectfully submits that these corrections place the drawings in compliance with the requirements of 37 C.F.R. § 1.84. A replacement drawing for Figure 3 reflecting these proposed corrections is submitted herewith.

Attention is directed to the rejection of claim 1 as obvious over *Gleeson et al.* in view of *Lewis et al.* Claim 1 is directed to a network system that resists denial of service attacks on an access link to a destination host belonging to a virtual private network (VPN), and recites “one or more egress boundary routers having connections to an access network including the access link, wherein said one or more egress boundary routers transmit **intra-VPN traffic from sources within the VPN and extra-VPN traffic from sources outside the VPN** within separate access network logical connections for intra-VPN and extra-VPN traffic... such that **denial of service attacks** on said access link originating **from sources outside the VPN can be prevented.**”

Gleeson et al. describes a general framework for virtual private networks running across IP backbones, without any mention of denial of service attacks. In the context of *Gleeson et al.*, a VPN is defined as the “emulation of a private wide area network (WAN) facility using IP facilities.” (See Page 1, ¶ 3)

According to the Office Action mailed on October 1, 2003, “Gleeson does not disclose expressly disclose [sic] the network system comprising a Differentiated Services network and separate the intra-VPN traffic and extra-VPN (i.e. public VPN) traffic such that denial of service attacks on said access link originating from sources outside the VPN can be presented [sic].” (See Office Action, Page 3, lines 5-8) Thus, the Office Action relies on *Lewis et al.* for the claim features. However, this reliance on *Lewis et al.* is misguided, as *Lewis et al.* pertains to a telephony network with no relevance to an IP based VPN of *Gleeson et al.*, as explained below.

According to the Office Action mailed on October 1, 2003:

Lewis discloses a network system comprising two communication paths, signal link and public network (i.e. Differentiated Service Network, see figure 1) which is used to coupling node A (i.e. an egress boundary router) and node B (i.e. an ingress boundary router). The CINS request message (i.e. intra-VPN traffic) is sent from the original node-A 10 to the terminating node-B 11. The intra-network call (i.e. extra-VPN traffic) can be established through a public network [see column 2 line 4 – column 3 line 63 and figure 1].

It would have been obvious to a person of ordinary skill in the art at the time of the invention was made to employ the public network path and protocol within the system of Gleeson to separate the intra-VPN traffic and extra-VPN.

The suggestion/motivation for doing so would have been used to separate the logical access path between intra-VPN traffic and extra-VPN so that the denial of service attacks can be prevented.

(See Office Action, Page 3, lines 9-21)

Lewis et al. is directed to private **telephone network services** (See, e.g., col. 1, lines 3-4), and to providing a network service which will allow **intra-network calls** that overflow to the

public network, and which has the ability to deliver private networking services that are transparent to the public network. (See, e.g., col. 1, lines 52-56)

Lewis et al., as with *Gleeson et al.*, is completely devoid of any mention of “denial of service attacks,” much less their prevention.

Also, there is no suggestion or disclosure by *Lewis et al.* of “**intra-VPN traffic from sources within the VPN**” and “**extra-VPN traffic from sources outside the VPN.**” There is instead a discussion of overflow of **intra-network traffic** into the public network by de-coupling feature and voice information such that feature information is transmitted on a signaling link established on private and/or public facilities, but voice information is transmitted over a public network **when calls overflow** (emphasis added). (See, e.g., col. 1, lines 61-68)

The Office Action equates the CINS request message of *Lewis et al.* as the claimed intra-VPN traffic. There is no factual basis for this interpretation, as the signaling link 13 transporting the CINS request message cannot be construed as any type of VPN even under *Lewis et al.*’s definition of virtual private network services (col. 1: 31-34). Applicant further notes that *Lewis et al.*’s notion of a virtual private network is not the IP based VPN of *Gleeson et al.*

The Office Action commits another interpretative error by equating the intra-network call as the claimed “extra-VPN traffic.” At best, even assuming the intra-network call as processed by the telephony based *Lewis et al.* system can be reasonably related to an IP based VPN of *Gleeson et al.*, the intra-network call is not “extra” traffic. The Office Action completely ignores the term “extra” in the term extra-VPN traffic, so much so as to equate it to the contradictory term “intra” in intra-network call.

Furthermore, Applicant respectfully points out that, in the context of telephone network services, nodes A and B of *Lewis et al.* are not “**routers.**” The IP network environment of *Gleeson et al.* is very different from the telephone network environment of *Lewis et al.*, at least in

the differences between routers (IP environment) and switches (telephone network environment) for handling traffic on the respective network environments. That is, the nodes A and B are telephony switching facilities (see col. 3: 4-42), and cannot be routers, much less the claimed “egress boundary routers.”

Therefore, *Gleeson et al.* and *Lewis et al.*, even if they can be properly combined based on some teaching or suggestion in the references, do not amount to the claim features.

Moreover, Applicant respectfully submits that there is no motivation to combine any features of the telephone network services of *Lewis et al.* with the IP network features of *Gleeson et al.* to obtain features recited by claim 1. For example, given the technical disparities between the telephony system of *Lewis et al.* and the IP network of *Gleeson et al.*, one of ordinary skill in the art would question the expectation of success of the proposed modification endorsed by the Office Action. Pursuant to MPEP § 2143.02, the Examiner must consider whether the modified system would have a reasonable expectation of success to meet his burden of showing *prima facie* obviousness.

Therefore, Applicant respectfully requests the withdrawal of the obviousness rejection, and urges the indication that independent claim 1 is allowable.

For reasons similar to those stated previously with regard to claim 1, Applicant additionally submits that the rejection of independent claims 9 and 16 should be withdrawn. The rejection of dependent claims 2-8, 10-15, and 17-20 should be withdrawn for at least the same reasons as their respective independent claims, and these claims are separately patentable on their own merits.

For example, dependent claim 2, which depends from claim 1, recites, “a Differentiated Services network coupling at least one of the plurality of ingress boundary routers and at least one of the one or more egress boundary routers.” Although the Office Action indicates that

claim 2 is rejected as obvious over *Gleeson et al.* in view of *Lewis et al.* (Per Office Action Summary, Item #6, Office Action, Page 2, lines 15-16, Page 7, line 5), the Office Action is silent with regard to any reason(s) for the rejection of claim 2. Applicant submits that the lack of any reasoning put forth by the Office Action for the rejection of claim 2 contravenes 35 U.S.C. § 132, which requires the Director to “notify the applicant thereof, stating the reasons for such rejection.” This section is violated if the rejection “is so uninformative that it prevents the applicant from recognizing and seeking to counter the grounds for rejection.” *Chester v. Miller*, 15 USPQ2d 1333 (Fed. Cir. 1990). This policy is captured in the Manual of Patent Examining Procedure. For example, MPEP § 706 states that “[t]he goal of examination is to clearly articulate any rejection early in the prosecution process so that applicant has the opportunity to provide evidence of patentability and otherwise respond completely at the earliest opportunity.” Furthermore, MPEP § 706.02(j) indicates that: “[i]t is important for an examiner to properly communicate the basis for a rejection so that the issues can be identified early and the applicant can be given fair opportunity to respond.”

Applicants respectfully submit that “a **Differentiated Services network** coupling at least one of the plurality of ingress boundary routers and at least one of the one or more egress boundary routers” as recited by the combination of features of claim 2 (*See also*, specification, page 4, line 15 – page 5, line 12) is not suggested or disclosed by any of the applied references individually, or by any reasonable combination thereof. Even assuming, *arguendo*, that one of the applied references mentions a network that might be construed as a **Differentiated Services network**, Applicant submits that, given the technical disparities between the **telephony** system of *Lewis et al.* and the **IP network** of *Gleeson et al.* one of ordinary skill in the art would question the expectation of success of any proposed modification(s) of these systems for a combination of features as recited by claim 2. If the rejection of claim 2 is maintained in a next

Office Action, Applicant respectfully requests that the Office Action maintaining the rejection be made non-final to afford Applicant a fair opportunity to respond.

Newly added claim 21 recites, “A method for resisting denial of service attacks on an access link to a destination host included in a VPN, the method comprising the steps of: assigning a first priority level to intra-VPN traffic flowing from sources included in the VPN; assigning a second priority level to extra-VPN traffic flowing from sources outside the VPN; and granting, to traffic having the first priority level at the access link, precedence of access to the destination host over traffic having the second priority level.” Neither of the applied references discloses assigning priority levels to intra-VPN traffic and extra-VPN traffic and granting precedence of access, to intra-VPN traffic, to a destination host included in the VPN. Additionally, neither of the references discloses “resisting denial of service attacks.” No new matter is added (*See, e.g.*, specification, page 10, lines 4-19). Therefore, it is believed that new claim 21 is allowable.

Therefore, the present application is in condition for allowance. Favorable reconsideration is respectfully requested. If any unresolved issues remain, it is respectfully requested that the Examiner telephone the undersigned attorney at (703) 425-6499 so that such issues may be resolved as expeditiously as possible.

Respectfully Submitted,

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